RECURRENT DEPRESSIVE DISORDER WITH POSTPARTUM ONSET: A DISTINCT DISORDER? A PRELIMINARY STUDY

Virgil Radu Enatescu[1], Ileana Enatescu[2], Lia Monica Ienciu[1], Radu Romosan[1], Ion Papava[1], Anca Tudor[3]

REZUMAT

Obiectiv: Continuă să rămână un subiect foarte controversat dacă depresia cu debut postpartum ar trebui considerată ca o tulburare psihiatrică distinctă. Utilizând cadru spitalicesc psihiatric, ne-am propus să studiem particularitățile depresiei unipolare cu debut în perioada postpartum. **Material și metode:** Am realizat o cercetare longitudinală retrospectivă asupra foilor de observație a 44 de paciente internate în Clinica de Psihiatrie Timișoara, cu diagnosticul de tulburare depresivă recurentă, conform ICD – 10. Mai multe variabile socio-demografice, clinice și de personalitate au fost analizate statistic. **Rezultate:** Surprinzător, nu au existat diferențe semnificative statistic între loturile analizate în ce privește variabilele socio-demografice, clinice și de personalitate ($p > 0.05$). Cu toate acestea, evenimentele stresante de viață, ce au precedat debutul depresiei, au fost semnificativ mai frecvent raportate în lotul studiat decât în cel de control ($p < 0.001$). Analiza grupurilor cumulate, a evidențiat existența unei corelații directe între vârsta mai tânără de debut a depresiei și trăsăturile de cluster C (testul χ^2, $p=0.047$). În grupul studiat, trăsăturile de personalitate de cluster B s-au corelat cu prezența riscului suicidar (testul χ^2, $p=0.002$). Numărul crescut al recurențelor depresive ulterioare debutului s-a corelat cu prezența trăsăturilor de personalitate de tip paranoid (test ANOVA, $p=0.028$). **Concluzii:** În ciuda similitudinii între profilele clinico-evolutive, depresia cu debut postpartum tinde să aibă un caracter mai reactiv decât depresia cu debut non postpartum. De asemenea, o evoluție mai negativă a depresiei cu debut postpartum ar putea fi corelată cu anumite paternuri ale trăsăturilor personalității.

Cuvinte cheie: postpartum, depresie recurentă, personalitate

ABSTRACT

Objective: There is an ongoing debate whether postpartum depression should be considered a distinct psychiatric disorder or a part of recurrent depressive disorder. We proposed to study the particularities of recurrent depression with postpartum onset, starting from psychiatric inpatient setting. **Material and methods:** A retrospective research has been conducted on medical records of 44 females, which were admitted in Timișoara Psychiatric Clinic, during 2004 – 2012, for recurrent depressive disorder. Studied group, consisted of 22 subjects, have had their onset of recurrent depression in postpartum period while the remaining 22 subjects (control group) hadn't postpartum onset. **Results:** There weren't any statistical significant differences between the analyzed groups, in terms of premorbid personality traits or any clinical evolutive parameters ($p > 0.05$). Nevertheless, stressful life events preceding onset of depression, were reported more frequently by subjects in the studied group than in the control group ($p < 0.001$). In cumulated groups we found significant direct correlations between earlier age of postpartum depressive onset and the cluster C traits of personality (est χ^2, $p=0.043$). In study group, cluster B traits of personality have direct correlations with the presence of suicidal risk (test χ^2, $p=0.002$). Moreover, the increased number of subsequent depressive recurrences have been directly correlated with paranoid traits of personality (ANOVA test, $p=0.028$). **Conclusions:** Despite the similarity between clinical and evolutive profiles, postpartum depression tends to be more reactive comparatively with non postpartum depression. Also, the worse outcomes of depression with postpartum onset could be correlated with certain patterns of personality traits.

Key Words: postpartum, recurrent depression, personality

INTRODUCTION

According to the results of prestigious epidemiological studies, unipolar depression is the most prevalent psychiatric disorder met in general population, and women are more vulnerable for major depression comparatively with men.[1,2]

Beside its significant epidemiological impact on general population, Lopez & Murray have estimated that by the year 2020, if it takes into account a general list including 135 medical and psychiatric diseases, unipolar depression will be the second leading cause of disability throughout the world, being surpassed only by coronary heart disease.[3]

The higher vulnerability for unipolar depression in women than in men should be viewed from several distinct perspectives. On the one hand, the particular biologic milieu, with huge plasmatic variations of different hormonal levels in relation to the distinct phases of reproductive apparatus, across the life span, could be considered as a comprehensive explanation for women vulnerability for depression.[4] On the other hand, the socio-cultural aspects regarding to overloaded roles of women, with more responsibilities than in men related to housekeeping, professional

[1] Department of Neuroscience - Discipline of Psychiatry, [2] Department of Obstetrics, Gynecology and Neonatology - Discipline of Neonatology, [3] Department of Medical Informatics, Victor Babes University of Medicine and Pharmacy, Timisoara

Correspondence to:
Virgil Radu Enatescu MD, PhD, 68B Dunarea Str., 307220, Giroc, Timis County, Tel. +40-723-374896, Fax +40-256-478148
Email: renatescu@yahoo.com

Received for publication: Apr. 18, 2012. Revised: Jun. 31, 2012.

career, parental duties etc., must be considered as being at least as important like as biological factors.[5]

Depressive episode with postpartum onset is experienced by almost 15% of women in the first 12 months after delivery.[6] These figures are very different depending on what we mean by postpartum period. Hence, if we take into account the DSM-IV-TR diagnostic criteria, the postpartum period is considered as being the four weeks after delivery. But according to ICD-10 diagnostic criteria, postpartum period is consisted of six weeks after delivery.[7,8]

However, at scientific level, there is still a great debate, if the postpartum depression should be classified as a distinct psychiatric disorder or if it just should be assigned to the diagnostic categories already included in existing diagnostic tools.[9] Moreover, it must be stressed that in contrast with DSM-IV-TR diagnostic manual, ICD-10 supplementary contains distinct diagnostic categories consecrated for psychiatric disorders occurring during the puerperium period.[7] If we consider the delivery, rather as a stressful life event that occurs on a particular terrain of mother's personality, then we could assign postpartum depression to adjustment disorders, as being brief or prolonged depressive reaction depending on total duration of episode and which are included in both diagnostic manuals, ICD-10 and DSM-IV-TR respectively.

Several biological and psychological factors were mentioned as having a determinant role in postpartum depression. First of all, immediately after delivery once that placenta is eliminated there is a sudden decrease in estrogen levels, especially in respect to their most active component such as the estradiol. On the other side, it was evidenced that estrogens have a significant role in augmentation of serotoninergic neurotransmission, due to their inverse relationship with monoamine oxidase (MAO-A) density in certain regions of the brain. Therefore, immediately in postpartum period there will be a decreased activity in this type of brain neurotransmission that could result in a depressive mood. In the same period, the increased level of prolactin that is necessary to maintain lactation will exert a negative feedback on dopamine release. This should be considered as being another possible pathway that could lead to depression.[10] But, these explanations are not sufficient because the majority of women who give birth will develop more frequent postpartum blues (subclinical depression that is quasi-physiological) while just about fifteen percent of women will develop postpartum depression after several weeks after delivery. Therefore, more recent studies have revealed that a serotonin transporter gene polymorphism, such as 5-HTTLPR S-allele genotype (serotonin-transporter linked polymorphic region), could predict peripartum depressive symptoms in women with psychiatric risk.[11] The same aforementioned hypothesis should be taken into account for the heredity or genetic perspective of postpartum depression.[12]

Other biological factors assumed to be involved in the etiopathogenesis of postpartum depression were found as follows: the occurrence of antithyroid antibodies caused by increased immunity reactions (immunologic rebound) correlated with low levels of cortisol once that placenta was eliminated (placental source), GABA-ergic dysfunction, diminished plasmatic level of ß-endorphins, decreased insulinemia with consequently diminished transport of tryptophan, etc.[13-17]

Regarding psychosocial factors that were evidenced as having a causative role in postpartum depression, the following could be mentioned: lack of social support and difficulties in couple relationship, unwished pregnancy, emotional and physical abuses in childhood, dysfunctional coping styles along with dysfunctional cognitive beliefs, primiparity, obstetrical problems during pregnancy, etc.[18-24]

Inter alia, there is a widespread opinion among experts, that postpartum depression, will evolve more likely toward a bipolar affective disorder than toward a recurrent depression, mainly, due to its early onset.[25]

Beside the well-known negative outcomes upon the functional and health status of mother, which are mostly superimposed with that of common depression, the prospective research data have revealed serious consequences on infants growth and psychological development.[26]

OBJECTIVES

We consider that most studies performed until now in respect to postpartum depression, have come in a disproportionately manner from obstetric setting. So, we established as a main purpose of our preliminary study, to research postpartum depression, somewhat inversely, from a temporal perspective of psychiatric setting, including women whose recurrent depression had an undoubtedly postpartum onset. This study was designed to evaluate the possible correlations between recurrent depression with postpartum onset, on the one side, and clinical, biographical and personality factors, on the other side, by comparison with women whose depression had recurrent non postpartum onset.

The hypotheses for studied group were as follows:

a. The main features of clinical picture in recurrent

depression with postpartum onset are distinct from those of recurrent depression without postpartum onset.

b. The pattern of clinical evolution of recurrent depression with postpartum onset is somewhat different comparatively with those of recurrent depression without postpartum onset.

c. The personality terrain of women having recurrent depression with postpartum onset is particular one which differs from that of women with recurrent depression without postpartum onset.

d. Regardless of the onset type, recurrent depression with negative outcomes upon clinical course and upon professional dynamic of depressive women, associates certain particularities comparatively with recurrent depression with favorable prognostic.

MATERIAL AND METHODS

Design and material

A case-control retrospective research was conducted by exploring data of medical records belonging to 22 women that were admitted in Timisoara Psychiatric Clinic, during 2004 – 2012, with recurrent depressive disorder with postpartum onset, according to ICD-10 diagnostic criteria. The control group consisted of 22 age and socio-demographic matched subjects, randomly selected by computer, that were admitted in Timisoara Psychiatric Clinic with recurrent depressive disorder without postpartum onset. Research sheets were prepared in order to record several items such as: current age, age at onset of first depressive episode, current professional status, professional status at the onset, educational level, marital status at the onset of index depressive episode, personality traits profile, presence or absence of suicidal risk, presence or absence of psychotic symptoms during depressive recurrences, psychiatric familial history, stressful life events preceding the onset of first depressive episode, total number of episodes, total number of psychiatric admissions, average duration of depressive episodes.

Three categories of statistical analyses were done: first analysis compared the two groups, second analysis had taken into account cumulated groups, and third analysis has considered just subjects from study group.

The personality traits were grouped according to ICD-10 diagnostic categories but we must underline follows aspects regarding to study design: each subject was assigned to no more than one category of personality, that was considered as being the most matched based on self-describing, psychological tests performed during hospitalization and other sources of information attached or included to medical records; none of the subjects from the study group nor from the control group did not meet criteria for any of personality disorder, except for accentuated traits of personality; in order to facilitate statistical processing the personality traits were further grouped into clusters of personality DSM-IV-TR by conversion method, hence paranoid and schizoid personality traits were included in cluster A, dissocial, emotional unstable, histrionic were assigned to cluster B and anxious (avoidant), anankastic and dependent traits of personality were considered as cluster C.

Statistical analysis

The resulted data was statistically analyzed with SPSS v.16 software program. For nominal data we used Chi-square test to determinate the significance of difference between groups and for establish the association between two categorical variables. For ordinal data we used the Mann-Whitney test to determinate the significance of difference between groups and we calculated the Spearman rho coefficient of correlations between data ranks. For more than 2 numerical data series we applied ANOVA test to compare values.

A P value of < 0.05 was accepted as statistically significant.

RESULTS

A. Groups description

Resulting from descriptive statistic analysis, there were no significant differences between the analyzed groups in respect to ages at onset of first episode and at current episode, professional status at onset and at current episode, marital status, residency and level of education. (Table 1) Therefore, we can consider these groups as being relatively homogenous and comparable.

B. Comparative analysis between the two groups

Regarding to the distribution of personality traits, we did not find a statistical difference between the two groups (chi-square test, $p = 0.682$). The personality cluster analysis did not reveal any statistically significant difference between the groups analyzed chi-square test, $p = 0.606$). (Fig. 1)

The presence of psychotic symptoms during the recurrent depressive disorder was less frequent than the absence of these, but no statistical difference was evidenced between the two analyzed groups (chi-square test, $p = 0.736$).

Another important clinical aspect of depressive disorder is that of suicide risk. In our research the presence of suicide risk was equally distributed between the two groups.

Table 1. Socio-demographical features of the analyzed groups.

Characteristic	Study group	Control group	Significance of differences
Age at onset (years),M ± SD	29.59 ± 5.12	29.63 ± 6.38	p = 0.979
Current Age (years), M ± SD	34.50 ± 7.62	37.50 ± 5.86	p = 0.151
Professional status at onset (employed + student)	10 (45.4)	15 (68.2)	p = 0.1
Current professional status (retired + unemployed)	13 (59.1)	13 (59.1)	p = 0.518
Married, n (%)	19 (86.4)	16 (72.7)	p = 0.205
Education (at least lyceum), n (%)	14 (63.6)	18 (81.8)	p = 0.572
Urban residence, n (%)	15 (68.2)	15 (68.2)	p = 0.627

M ± SD = mean ± standard deviation

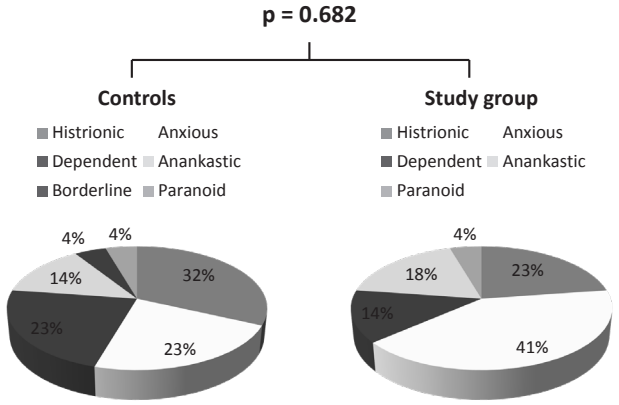

Figure 1. Personality traits profile distribution in analyzed groups, according to ICD-10.

Concerning the family history of psychiatric disorders, despite apparent differences related to more frequent mood disorders in relatives of control subjects while only in study group the non affective psychosis was present in their relatives, there weren't any statistical significant differences (chi-square test, p = 0.443). (Fig. 2)

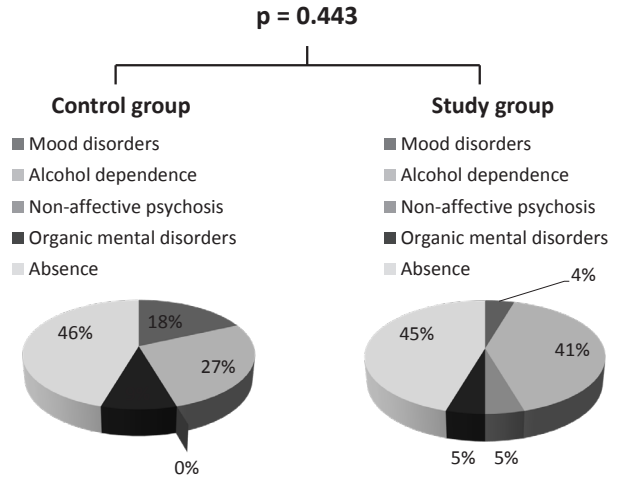

Figure 2. Family history of psychiatric disorders in analyzed groups.

In both analyzed groups, it was evidenced the negative outcome of recurrent depression upon professional dynamic, without significant differences between control and study subjects. By negative professional dynamic we mean that the most subjects were employed and/or student at the onset of first depressive episode and subsequently at the current episode they became either unemployed or retired (chi-square test, p = 0.487).

If we take into account the perspective of endogenous versus reactivity in the occurrence of first depressive episode which could continues with recurrent depression later, it is absolutely necessary to identify the possible factors that trigger the onset of first episode. In this regard, our research tried to assess in what extent the stressful life events could play a triggering role for the onset of depression. These types of events were classified in accord with three distinct qualitative categories: stressful life events with danger significance, stressful life events with lost significance and stressful life events with other kind of significance. In the latter group of events, the most frequent situation consists of numerous conflicts in couple relationship. Thus, stressful life events with other kind of significance have played a more statistically significant role in triggering the first episode of depression in women with postpartum onset compared to those without postpartum onset (chi-square test p=0.025, for 0.05 level of significance). (Fig. 3)

C. Statistical analysis on cumulated groups

It has been found that cluster A of personality is significantly correlated with higher age at onset of depression while cluster C of personality is significantly correlated with earlier age at the onset of depression (significant correlation, chi-square test, p=0.047 with 0.05 level of significance)

Somewhat surprisingly, the average duration per episode was greater in married subjects than in single and divorced women (significant correlation, chi-square test, p=0.011 with 0.05 level of significance).

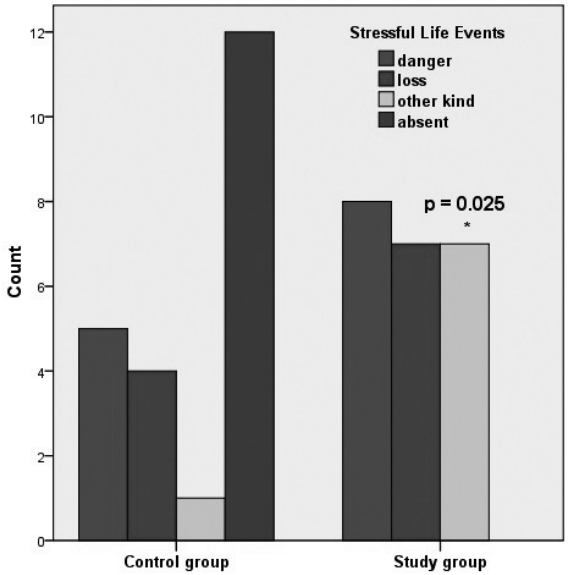

Figure 3. The role of stressful life events in triggering of the first depressive episode in both analyzed groups.

Another interesting result that has emerged from our research, revealed that in both groups, the negative outcomes upon professional trajectory during the total period of recurrent depression were significantly correlated with the presence of cluster A personality (chi-square test, p=0.043 with 0.05 level of significance). (Fig. 4) Moreover, the depressed women with negative outcomes upon professional status, during the total duration of disorder, have had significantly higher numbers of depressive episodes (unpaired t test, p=0.023 with 0.05 level of significance) and more psychiatric hospitalizations than women which had preserved their professional skills (unpaired t test, p=0.031 with 0.05 level of significance). (Fig. 5)

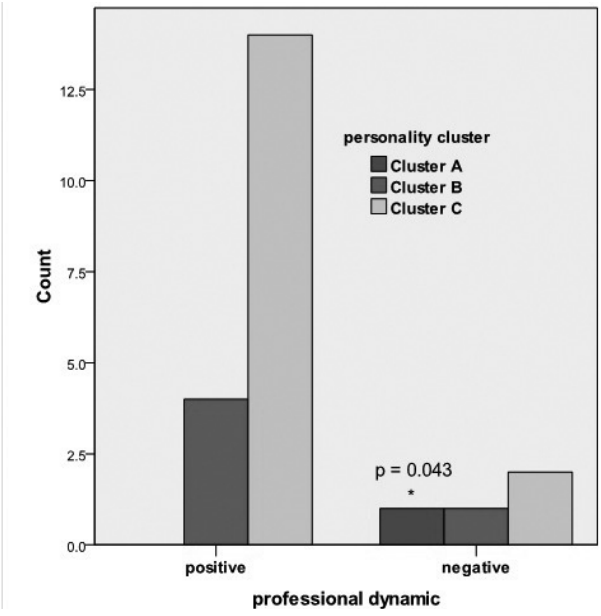

Figure 4. Impact of personality clusters upon professional prognostic in cumulated groups.

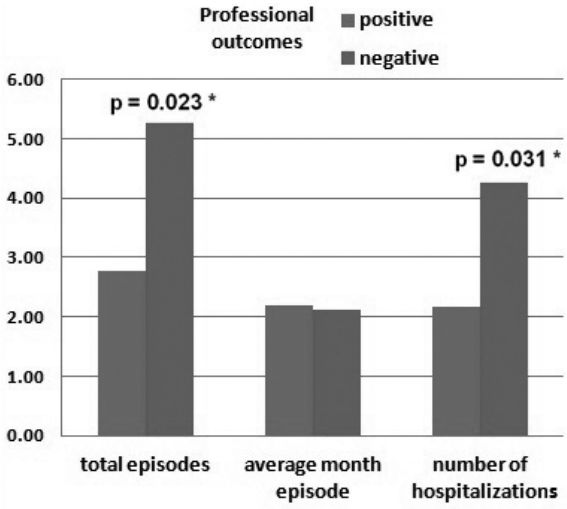

Figure 5. Impact of clinical evolutive features of recurrent depression on professional skills in cumulated group.

D. Study group analysis

We found that the increased number of total depressive episodes during recurrent depression has correlated significantly with the presence of paranoid personality traits in the study group (significant correlation, ANOVA test, p=0.028 with 0.05 level of significance). (Fig. 6)

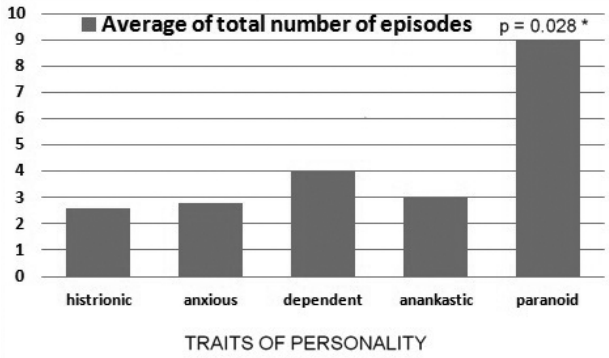

Figure 6. The correlation between total number of depressive episodes and personality traits in study group.

Cluster B personality significantly correlated with the presence of suicide risk in subjects from the study group (significant correlation, chi-square test, p=0.002 with 0.01 level of significance). (Fig. 7)

DISCUSSIONS

The socio-demographical features of our study groups were in concordance with those provided by international literature.[1,27] Hence, based on our results we can draw several conclusions. Unlike the other major psychiatric disorders (e.g. schizophrenia and bipolar affective disorder), recurrent depressive disorder correlates with better marital status, level of education and professional abilities at the onset of illness.[28,29]

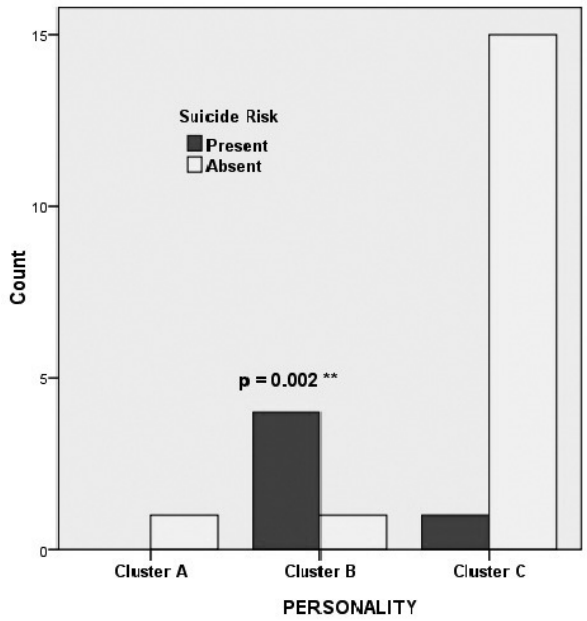

Figure 7. Personality cluster and risk of suicide in study group subjects.

Unfortunately, despite the treatability of unipolar depression, its generally recognized negative outcomes upon the professional skills remain to be very problematic for psychiatric practitioners' community. Most of the depressed subjects, who are engaged in their professional activity at moment of the index episode of the clinical depression, fail to remain professionally active several years after the recurrent depression.

On the other side, loss of professional skills in recurrent depressive patients could be better explained by the subjective reasons, such as the lowered self-esteem and sense of insufficiency, rather than by subtle neurocognitive impairments that persist permanently, even during remission periods in bipolar affective disorder and schizophrenic patients.[28,29]

Regarding the clinical evolutive and premorbid personality profiles of the two analyzed groups, there were no significant differences, which indicates the existence of extensive similarities between recurrent depression with and without postpartum onset. Hence, in respect to premorbid personality profiles, we conclude that traits grouped under cluster C of personality, such as anxious, anankastic and dependent personality, are most represented in individuals which subsequently developed recurrent depressive disorders. These results were concordant with those existing in other studies.[30] However, it should be noted that in our research, women with postpartum onset of recurrent depression had more frequent anxious (avoidant) traits of personality while in recurrent depression without postpartum onset the histrionic personality traits were predominant. These differences were not statistically significant.

In the analyzed groups, the positive history for a psychiatric condition in first degree relatives was more frequent than their absence, with the specification that alcohol dependence was ranked on the first place in both groups. Thus, the question arises whether alcohol dependence perhaps should be considered as being genetically linked to depression?[31]

As a valuable result of our research should be considered the reactive character of initial postpartum depressive episode, argued by the most frequent stressful life events that precede and trigger the onset of first depressive episode, by comparison with recurrent depression without postpartum onset. This result could better explain the involvement of psychological factors in triggering postpartum depression that afterwards could be maintained by neurobiological mechanisms. Thus, it could be developed an etiopathogenetic integrative model of psychological and social factors that could underlie depression with postpartum onset. Like in other studies, in our research the presence of marital or couple relationship conflicts were significant revealed as a triggering factor for the first depressive episode with postpartum onset, regardless of financial status and educational advantages.[32]

In the cumulated group analysis, the correlation between higher age at onset of first depressive episode and cluster A of personality could be reasoned by the poorer social abilities of these kinds of individuals which will establish later marriage, with numerous conflicts between partners that could triggers the first depressive episode. Instead, the correlation between cluster C of personality and earlier age at the onset of depression could be rather explained based on the negative emotions that are more intense and persistent experienced by these persons. In the same manner, the longer duration of depressive episodes in married women could be argued by the existence of already mentioned problems in marital or couple relationship. The correlation of cluster A traits of personality with worse professional outcome should be viewed rather as an attribute of pathoplastic role of personality upon clinical expression of depression during its course.

According to our results, presence of paranoid traits of personality have had more negative impact on clinical course of recurrent depression with postpartum onset, due to the increased number of total episodes. This result could be better understood through the perspective of persistent and pervasive dysfunctional patterns of relationship, marked by suspiciousness and lack of confidence, that are specifically assigned to this type of individuals, in all domains of functioning.

Not surprisingly, cluster B of personality will increase the risk of suicide regardless of the severity

of depression, rather as a core feature of this cluster type of personality.[33]

The interpretation of these results is subjected to certain limitations, due to the retrospective nature of the assessments of clinical and personality profiles and to the small number of cases studied.

CONCLUSIONS

There are many similarities between recurrent depression with and without postpartum onset, in respect to clinical, evolutive and terrain of personality on which depression occurs.

However, there is a real possibility that postpartum depression will occur more often in a reactive manner than depression without postpartum onset.

Once the depression has occurred, the pathoplastic role of personality traits will shape the subsequent clinical course of recurrent depression, regardless of postpartum onset of depression.

According to results revealed by other studies, it is absolutely necessary to take into consideration that is very possible as a significant part of depressive episode with postpartum onset will subsequently evolve towards a bipolar affective disorder rather than in a recurrent depressive disorder, mainly due to the early age of the mother at the onset of depression.

Undoubtedly, more studies involving more subjects are needed to clarify this topic.

REFERENCES

1. Kessler RC, Berglund P, Demler O, et al. The epidemiology of major depressive disorder: results from the National Comorbidity Survey Replication (NCS-R). JAMA 2003;289(3):3095-105.
2. Üstün TB, Ayuso-Mateos JL, Chatterji S, et al. Global burden of depressive disorders in the year 2000. Br J Psychiatr 2004;184(5):386-92.
3. Murray CJL, Lopez AD. Alternative projections of mortality and disability by cause 1990–2020: Global Burden of Disease Study. Lancet 1997;349:1498–504.
4. Deecher D, et al. From menarche to menopause: Exploring the underlying biology of depression in women experiencing hormonal changes. Psychoneuroendocr 2008;33:3.
5. Keita GP. Psychosocial and cultural contributions to depression in women: considerations for women midlife and beyond. J Manag Care Pharm 200713(9):S12-5.
6. National Research Council and Institute of Medicine. Depression in parents, parenting, and children: opportunities to improve identification, treatment, and prevention. Washington, DC, USA: The National Academies Press, 2009.
7. World Health Organisation. ICD-10 classifications of mental and behavioural disorder: clinical descriptions and diagnostic guidelines. Geneva: World Health Organisation, 2009
8. Diagnostic and Statistical Manual of Mental Disorders (4th Ed., Text revision) (DSM-IV-TR). Washington DC: American Psychiatric Association, 2000.
9. Bernstein IH, Rush AJ, Yonkers K, et al. Symptom features of postpartum depression: are they distinct? Depress Anxiety 2008;25(1):20-6.
10. Sacher J, Wilson AA, Houle S, et al. Elevated brain monoamine oxidase a binding in the early postpartum period. Arch Gen Psychiatry. 2010;67(5):468-474.
11. Binder EB, Newport DJ, Zach EB, et al. A serotonin transporter gene polymorphism predicts peripartum depressive symptoms in an at risk psychiatric cohort. J Psychiatr Res 2010;44(10):640–6.
12. Murphy-Eberenz K, Zandi PP, March D, et al. Is perinatal depression familial? J Aff Disord 2006;90:49–55.
13. Groër MV. Postpartum thyroiditis. Expert Rev Obstret Gynecol 2008;3(2):239–44.
14. Nemeroff CB. Understanding the pathophysiology of postpartum depression: implications for the development of novel treatments. Neuron 2008;59:185–6.
15. Maguire J, Mody I. GABAAR plasticity during pregnancy: relevance to postpartum depression. Neuron 2008;59:207–13.
16. Yim IS, Glynn LM, Schetter CD, et al. Prenatal β-endorphin as an early predictor of postpartum depressive symptoms in euthymic women. J Aff Disord 2010;125:128–33.
17. Chen TH, Lan TH, Yang CY, et al. Postpartum mood disorders may be related to a decreased insulin level after delivery. Med Hypotheses 2006;66:820–23.
18. Verkerk GJM, Denollet J, Van Heck GL, et al. Personality factors as determinants of depression in postpartum women: a prospective 1-year follow-up study. Psychosom Med 2005;67:632–7.
19. Milgrom J, Beatrice G. Coping with the stress of motherhood: cognitive and defense style of women with postnatal depression. Stress Health 2003;19:281–7.
20. Tychey C, Spitz E, Briançon S, et al. Pre- and postnatal depression and coping: A comparative approach. J Aff Disord 2005;85:323–6.
21. Ritter C, Hobfoll SE, Lavin J, et al. Stress, psychosocial resources, and depressive symptomatology during pregnancy in low-income, inner-city women. Health Psychol 2000;19:576–85.
22. McLaren L, Kuh D, Hardy R, et al. Postnatal depression and the original mother-child relationship: A prospective cohort study. J Aff Disord 2007;100:211–9.
23. Eberhard-Gran M, Eskild A, Tams K, et al. Depression in post-partum women: prevalence and risk factors. Acta Psychiatr Scand 2002;106:426–33.
24. Rubertsson C, Wickberg B, Gustavsson P, et al. Depressive symptoms in early pregnancy, two months and one year post-partum: prevalence and psychosocial risk factors in a National Swedish sample. Arch Womens Ment Health 2005;8:97–104.
25. Sharma V, Khan M. Identification of bipolar disorder in women with postpartum depression. Bipolar Disorders 2010;12:335–40.
26. Bagner DM, Pettit JW, Lewinsohn PM, et al. Effect of maternal depression on child behavior: a sensitive period? J Am Acad Child Adolesc Psychiatry 2010;49:699-707.
27. Robins LN, Regier DA. Psychiatric disorders in America: the Epidemiologic Catchment Area Study. New York: The Free Press, 1991.
28. Mueser KT, Pratt SI, Bartels SJ, et al. Neurocognition and social skill in older persons with schizophrenia and major mood disorders: An analysis of gender and diagnosis effects. J Neurolinguistics 2010;23(3):297–317.
29. Kessler R., Frank R. The impact of psychiatric disorders on work loss days. Psychol Med, 1997;27:861-73.
30. Casey P, Birbeck G, McDonagh C, et al; ODIN Group. Personality disorder, depression and functioning: results from the ODIN study. J Affect Disord 2004;82(2):277-83.
31. Kendler KS, Heath AC, Neale MC. Alcoholism and major depression in women. Arch Gen Psychiatry 1993;50:690–8.
32. Roux G, Anderson C, Roan C. Postpartum depression, marital dysfunction, and infant outcome: a longitudinal study. J Perinat Educ 2002l;11(4):25–36.
33. Dumais A, Lesage AD, Alda M, et al. Risk factors for suicide completion in major depression: a case-control study of impulsive and aggressive behaviors in men. Am J Psychiatry 2005;162(11):2116-24.